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10/561,392	12/19/2005	Beat Schmidhalter	ELI2-22907/A/PCT	6519
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04/30/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/561,392

**Applicant(s)**

SCHMIDHALTER ET AL.

**Examiner**

GERARD T. HIGGINS

**Art Unit**

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 and 11-20 is/are pending in the application.
- 4a) Of the above claim(s) 8-9 and 11-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 17-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 02/24/2006.
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-7 and 17-20, drawn to an optical recording medium.

Group II, claim(s) 8 and 9, drawn to a method of recording or reading an optical recording medium of Group I.

Group III, claim(s) 11 and 12, drawn to an optical recording medium.

Group IV, claim(s) 13-16, drawn to a method of recording or reading an optical recording medium.

2. The inventions listed as Groups I-IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Group II has the special technical feature of being recorded or played at 300 to 500 nm, Group III has the special technical features of the recording layer depth at the lands and grooves, and Group IV has the special technical feature of "marks of different reflectivity." All of these special technical features are not found throughout the groups, and therefore the invention lacks unity.

3. The examiner has required restriction between product and process claims.

Where applicant elects claims directed to the product, and the product claims are subsequently found allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder.

All claims directed to a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103 and 112. Until all claims to the elected product are found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowable product claim will not be rejoined. See MPEP § 821.04(b). Additionally, in order to retain the right to rejoinder in accordance with the above policy, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

4. During a telephone conversation with Joseph Suhadolnik on 04/21/2008 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-7 and 17-20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 8, 9, and 11-16 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Priority***

6. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

7. The information disclosure statement filed 02/24/2006 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the specific foreign documents referred to therein have not been considered. Although the Examiner recognizes that applicants have provided the US patent equivalents of all the foreign documents, applicants still must provide a copy of all foreign documents for the record.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 1794

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 3, 7, and 17-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

In the present instance, claim 3 recites the broad recitation "Y is hydrogen, bromine, or OR<sub>4</sub>," and the claim also recites "very especially hydrogen," which is the narrower statement of the range/limitation. The same claim also contains the language "very especially" in the third bulleted limitations. Additionally, the "very especially" language can be found in bullets 2 and 3 of claim 17.

The term "almost circular" in claim 7 is a relative term which renders the claim indefinite. The term "almost circular" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear how circular a recording mark must be in order to be considered almost circular.

### ***Claim Rejections - 35 USC § 102***

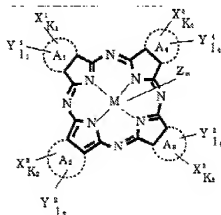
10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

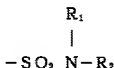
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1, 2, 4-7, and 20 rejected under 35 U.S.C. 102(b) as being anticipated by Sato (JP 05-177949).

With regard to claims 1 and 2, Sato discloses the Formula 1 for a recording layer of an optical recording medium.



The 'A' substituents can be the same as applicants invention, preferably this molecule is in the form of a phthalocyanine (fused benzenes on the pyrroline or pyrrole rings) [0014]. The 'Y' substituents overlap with applicants' 'Y' substituents, including the ability to have hydrogen [0015]; furthermore, the 'Z' substituent of Sato comprises the 'Y' substituent of applicants as well. With regard to the metal center of claim 1, Sato uses Si and Sn, which can be 2- to 4- valent. With regard to the sulfonylhydrazide [ $\text{SO}_2\text{N}(\text{R}_3)\text{NR}_1\text{R}_2$ ] substituent, Sato discloses at [0014] and [0015] that the 'X' substituents can be the following sulfonamide type group.



At [0017] Sato discloses that  $\text{R}_1$  and  $\text{R}_2$  can be an "amino group," which therefore makes the functional group a sulfonylhydrazide group. Sato then goes on to disclose the substituents on the "amino group" at [0017], including acyl groups and heterocycles.

With regard to claims 4 and 20, Sato discloses at [0048] that the proportion of binder in the recording layer is not to exceed 30% by weight, which means that the proportion of phthalocyanine will make up the plurality of the recording layer, and hence will be 60-70%.

With regard to claim 5 and 6, Sato discloses an optical recording medium structure at [0050] including a disc that consists of a "substrate/recording layer/reflective layer/protective layer." This arrangement can anticipate either of the arrangements of

Art Unit: 1794

applicants' claims 5 and 6 because the substrate of Sato is a covering layer *per se*, and the protective layer of Sato is a substrate.

With regard to claim 7, since the molecules anticipate those of applicants' claims 1, the Examiner has reason to believe that the properties of the recorded marks formed in the recording layer would inherently comprise the shapes of applicants' claim 7.

### ***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 3 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (JP 05-177949), as applied to claims 1 and 2 in view of Berneth et al. (US 2002/0076648).

Sato discloses all of the limitations of applicants' claims 1 and 2 in section 10 above; however, it fails to disclose a situation where the metal center is unsubstituted, has a valency of 2, and specifically is Cu(II).

Berneth et al. disclose that it is well-known to use substituted copper phthalocyanines in optical recording media [0058]. They specifically recognize that these compounds are useful for high-density recording media because of the ability to excite into the Soret band in the blue spectral region [0011]. They also disclose that it is

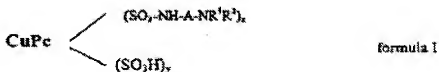
Art Unit: 1794

known to use tetravalent silicon phthalocyanines, while still exciting into the Soret band [0083].

Since Sato and Berneth et al. are both drawn to substituted phthalocyanines in optical recording media, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the tetravalent metal centers of Sato with divalent copper of Berneth et al. The results of which would have been obvious to one having ordinary skill.

14. Claims 1-7 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berneth et al. (WO 00/75922), of which CA 2,375,669 is the Canadian national stage entry and will be used herein as a translation.

With regard to claims 1-3 and 17-19, Berneth et al. teach the compound of Formula (I) as a compound for the recording layer of an optical recording medium (page 3, lines 5-31).



The molecule is a copper (II) phthalocyanine that may be substituted by 2 to 4 of the sulfonamide groups. The sulfonic acid group is not necessary in this invention, i.e. 'y' can be zero. The substituents R<sub>1</sub> and R<sub>2</sub> may be the same as some of the R<sub>1</sub> and R<sub>2</sub> presented by applicants, including R<sub>1</sub> and R<sub>2</sub> forming a 5 or 6 membered ring; however, this compound is different from that of applicants because it has a spacer group 'A'

located between the two nitrogens that may be an alkyl or alkylene spacer group (page 3, lines 16-17).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make a version of this compound that did not have the spacer groups located in between the two amine nitrogens. Berneth et al. present numerous spacers from 1 to 6 carbons long as specific examples, and from this one of ordinary skill in the art of organic chemistry would have known to prepare an analogue that did not have a spacer unit; furthermore, one of ordinary skill would have understood that the properties of this molecule would not have differed drastically from the copper phthalocyanines that comprised the spacer group 'A.'

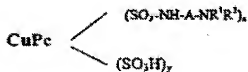
With regard to claims 4 and 20, Berneth et al. teach on page 4, lines 4-13 that the dye may be present in the recording layer solution at a starting concentration of 100 parts by weight dye to 100 parts by weight solvent. This is equivalent to 50 % dye molecules by weight. Berneth et al. also teach in examples 4 and 5 (page 8, lines 26-27 and page 9, lines 15-16) that it is known to prepare a solution of 7.5% dye molecules in order to prepare the recording layer of the optical recording medium. This means that when dried the recording layer would have a wt. % of dye that was greater than 7.5 %; further, with regard to claim 20, it would have been obvious to vary the concentration of the dye in the recording layer to any value, including those claimed in order to arrive at a recording layer that would have the proper absorption of laser light at the excitation wavelength.

With regard to claims 5 and 6, Berneth et al. teach an optical recording medium structure at page 4, line 6 to page 5, line 16 including a disc that consists of a substrate, a recording layer, a reflective layer, and a protective layer. This arrangement can anticipate either of the arrangements of applicants' claims 5 and 6 because the substrate of Berneth et al. is a covering layer *per se*, and the protective layer of Berneth et al. is a substrate.

With regard to claim 7, since the Examiner has shown that the molecules in applicants' claims 1-3 and 17-19 are rendered obvious, the Examiner has reason to believe that the properties of the recorded marks formed in the recording layer would intrinsically comprise the shapes of applicants' claim 7; furthermore, the shapes of recording marks are also related to the speed at which the disk rotates, and the power output and NA of the laser used.

15. Claims 1-7 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berneth et al. (WO 00/75922) in view of Fox (GB 613,782).

With regard to claims 1-3 and 17-19, Berneth et al. teach the compound of Formula (I) as a compound for the recording layer of an optical recording medium (page 3, lines 5-31).



formula I

The molecule is a copper (II) phthalocyanine that may be substituted by 2 to 4 of the sulfonamide groups. The sulfonic acid group is not necessary in this invention, i.e. 'y' can be zero. The substituents  $R_1$  and  $R_2$  may be the same as some of the  $R_1$  and  $R_2$  presented by applicants; however, this compound is different from that of applicants because it has a spacer group 'A' located between the two nitrogens that may be an alkyl or alkylene spacer group (page 3, lines 16-17).

Fox teaches that copper phthalocyanine sulfonylhydrazides are well-known (Examples 2 and 3). Example 2 specifically teaches a phenyl hydrazine that is bound to the sulfonyl group *via* a reaction in between a sulfonyl chloride and the phenyl hydrazine.

Since the usage of phthalocyanines and copper phthalocyanines are so well-known in the art of optical recording media, it would have been obvious to one having ordinary skill in the art at the time the invention was made to try the inventive copper phthalocyanine of Fox as the recording layer of the optical recording medium of Berneth et al. Fox teaches that his dyes are a vivid green shade, which intrinsically means that the molecule is absorbing in the red end of the electromagnetic spectrum. Berneth et al. mention that the copper phthalocyanines of their invention are useful for CD-R type recording layers, which intrinsically means that they will be using recording lasers of 750-800 nm (the red portion of the electromagnetic spectrum). It would have been obvious to someone in the field of chemistry that the green (red absorbing) dye of Fox would intrinsically be useful as a recording dye in the CD-R system of Berneth et al.

***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited but not used art is the US equivalent to the GB 613,782 patent; additionally, the Examiner has included his STN search history.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GERARD T. HIGGINS whose telephone number is (571)270-3467. The examiner can normally be reached on M-F 7:30am-5pm est. (1st Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1794

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Supervisory Patent Examiner, Art Unit 1794